Title: **JP9237983A2: CABLE HOLDER**

Derwent Title: Cable holder for electronic device - has cylindrical interval maintenance part with one end coupled to centre of cable retainer and other end fixed to chassis, to maintain predefined interval between cable and chassis [Derwent Record]

Country: **JP** Japan
Kind: **A**

Inventor: **MATSUHASHI SHINOBU;**

Assignee: **NEC HOME ELECTRON LTD**
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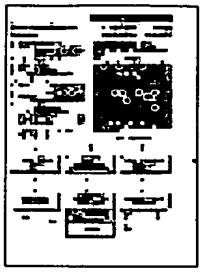

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1 page

Published / Filed: **1997-09-09** / 1996-02-29

Application Number: **JP1996000069431**

IPC Code: **H05K 7/00;**

Priority Number: 1996-02-29 **JP1996000069431**

Abstract:

PROBLEM TO BE SOLVED: To obtain a cable holder which is capable of holding a cable and at the same time keeping the interval from other parts constant so as not to bring it into contact with them independently of its length, size, torsion, bending and the like.

SOLUTION: A cable holder 11 is a plastic molded body equipped with a spiral holder 11a which spirally twines around a cable 12 to be able to hold it and a rod-shaped space retainer 11b integratedly joined to the center of the holder 11a at a right angle to the center. The holder 11a is twined around the cable 12, and the tip 11c of the spiral space retainer 11b is fixed to a part 13 such as a chassis. As the cable 12 is held with the spiral holder 11a, it can be tightly held even if it is slightly thin in outer diameter, and the spiral holder 11a is able to effectively curb the cable 12 holding its certain part specified in length. Therefore, the cable 12 can be held by the cable holder 11 as kept at a constant interval from the part 13 which is desired to be kept separate from the cable 12 by a certain distance independently of its length, size, torsion, bending and the like.

Family: None

Other Abstract Info: DERABS G97-500657 DERG97-500657

* NOTICES *

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[The technical field to which invention belongs] This invention relates to the cable holder which holds a cable so that a cable may not contact other parts or cables may not contact mutually in the interior, the exterior, etc. of electronic equipment.
[0002]
[Description of the Prior Art] For example, in the interior, the exterior, etc. of electronic equipment, a cable contacts other parts, or when it is not desirable that cables contact mutually, the cable is conventionally held using the cable holder 1 like drawing 3 , or the cable holder like drawing 4 . The cable holders 1 of drawing 3 are the parts made from plastics of the structure which has attaching part 1a of the configuration which the nose of cam of the piece of a branch is twisted, and is closed annularly, and cylindrical interval maintenance section 1b in one. When a cable 3 is held in the aforementioned attaching part 1a and contacting a cable 3 fixes the nose of cam of the aforementioned interval maintenance section 1b to the parts (it is hereafter called non-contact parts) 4 which are not desirable, distance with the non-contact parts 4 is kept constant, holding a cable 3.
[0003] Moreover, the cable holder 2 of drawing 4 is the structure which prepared the same attaching part 2a as the above in the ends of cylindrical interval maintenance section 2b, and it keeps the interval of both the cables 3 constant by holding two cables 3 which are parallel in both attaching part 2a, respectively, holding both the cables 3.
[0004]
[Problem(s) to be Solved by the Invention] Since the cable holder 1 of above-mentioned drawing 3 restrains a cable 3 effectively when the bore diameter of attaching part 2a which the length (the length of the range which should be restrained) of a cable 3 closes annularly short moreover is appropriately equivalent to the outer diameter of a cable 3 and grasps a cable 3 closely, it can also maintain an interval with the non-contact parts 4 by the one cable holder 1. However, since a cable 3 cannot be effectively restrained if the same cable holder 3 is used when the length of a cable 3 becomes long or an outer diameter becomes thin, a possibility that a cable 3 may contact the non-contact parts 4 arises only in the one cable holder 3. Moreover, even if the bore diameter of attaching part 1a is appropriately equivalent to the outer diameter of a cable 3, when torsion and bending are in a cable 3, in the one cable holder 3, a cable 3 cannot be restrained effectively too but a possibility that a cable 3 may contact the non-contact parts 4 arises. For this reason, usually, in order to maintain the interval of a cable 3 and the non-contact parts 4, two or more cable holder 1 was used conventionally.
[0005] Moreover, the same was said of the case of the cable holder 2 of drawing 4 , and by the length of a cable 3, the size, torsion, bending, etc., in order to be unable to restrain a cable 3 effectively in one cable holder 2 but to usually maintain the interval of cable 3 conventionally for this reason, two or more cable holder 2 was used.
[0006] While it was made in order that this invention might cancel the above-mentioned conventional fault, and holding a cable, it aims at offering the cable holder which can maintain certainly an interval with the parts which adjoin a cable and this, or the interval of cables by one or a small number of cable holder regardless of the length and the size of a cable, torsion, bending, etc.
[0007]
[Means for Solving the Problem] The cable holder of the 1st invention which solves the above-mentioned technical problem is characterized by having the spiral attaching part which can coil around a cable spirally and can hold a cable, and the interval maintenance section which a nose of cam is fixed to the parts which are prepared in this attaching part and one and adjoin a cable passage position, and maintains the interval of the aforementioned attaching part and the aforementioned parts.
[0008] Moreover, the cable holder of the 2nd invention is characterized by having the spiral attaching part of the couple which can coil around two cables spirally, respectively and can hold each cable and which counters, and the interval maintenance section which is prepared between the attaching parts of the aforementioned couple at

one, and maintains the interval of both attaching parts.

[0009]

[Embodiments of the Invention] Hereafter, it explains with reference to the example which shows the gestalt of implementation of the 1st invention and the 2nd invention to drawing 1 and drawing 2 . One example of the cable holder 11 of the 1st invention is shown in drawing 1 . This cable holder 11 is for contacting a cable 12 and this cable 12 maintaining uniformly an interval with the parts (henceforth non-contact parts) 13, such as a chassis which is not desirable, holding a cable 12. Spiral attaching part 11a which can coil around a cable 12 spirally and can hold a cable 12, It has cylindrical interval maintenance section 11b really combined in the center of this spiral attaching part 11a right-angled, and the whole configuration is being fixed in general to the aforementioned non-contact parts 13 with which the nose of cam of nothing and the aforementioned interval maintenance section 11b adjoins a cable passage position in T form (a spiral portion is regarded as a straight line and it is T form). The fixed means of this example is the structure which formed splenium 11c which expands and contracts elastically at the nose of cam of interval maintenance section 11b, and formed inner breadth hollow 13a which holds this splenium 11c in the non-contact part 13 side. At the time of installation, it expands inside backward [which splenium 11c contracted and passed through the entrance when splenium 11c at the nose of cam of interval maintenance section 11b was stuffed into inner breadth hollow 13a], and it is fixed in inner breadth hollow 13a so that it may not escape simply. In addition, also in the mere through hole which a means to fix the nose of cam of the aforementioned interval maintenance section 11b to the adjoining non-contact parts 13 made in the thin monotonous section instead of an inner breadth hollow [like the example of illustration] whose other party with which splenium 11c at a nose of cam engages is not only in the example of illustration but in drawing 1 , it thinks. Moreover, in the case of the mere through hole, it is good also as composition which forms not a splenium but a screw thread in the point of interval maintenance section 11b, and is bound tight and fixed with a nut. Manufacturing by plastics is appropriate for this cable holder 11. Moreover, injection molding etc. can perform the fabrication.

[0010] When holding a cable 12 by the above-mentioned cable holder 11, after twisting spirally spiral attaching part 11a of the cable holder 11 around a cable 12, interval maintenance section 11b can be attached in inner breadth hollow 13a of the non-contact parts 13, or the reverse procedure can perform. If a cable 12 is held by this cable holder 11, since a cable 12 will be grasped by spiral attaching part 11a, even if the outer diameter of a cable 12 becomes thin a little, it is possible to grasp a cable 12 closely similarly, and a cable 12 can be restrained effectively. Moreover, since spiral attaching part 11a will hold the fixed length range of a cable 12, a cable 12 can be effectively restrained also at this point. Therefore, even if torsion and bending are in a cable 12, attaching part 11a can correct the torsion and bending, can hold a cable 12, and can hold a cable 12 in a desired position. Thus, regardless of the length of a cable 12, a size, torsion, and bending, an interval with the non-contact parts 13 is maintainable a certain grade, holding a cable 12. In addition, in drawing 1 , 14 is parts, such as a chassis it is not desirable to contact a cable 12 similarly, and the interval to this part 14 is also maintained uniformly.

[0011] One example of the cable holder 21 of the 2nd invention is shown in drawing 2 . This cable holder 21 is for keeping the interval between two cable 12 constant. Spiral attaching part 21a of the couple which can coil around two cables 12 spirally, respectively, and can hold each cable 12 and which counters, It has cylindrical interval maintenance section 21b which is prepared among attaching part 21a of the aforementioned couple at one, and maintains the interval of both attaching part 21a, and the whole configuration is making H form (regarding a spiral portion as a straight line H form : drawing sideways H) in general.

[0012] In this cable holder 21, if spiral two attaching part 21a is twisted around a cable 12, respectively as illustration, the interval of cable 12 comrades will be uniformly maintained by interval maintenance section 21b, holding a cable 12 by each attaching part 21a, respectively.

[0013] In addition, each of spiral attaching part 11a in the cable holder 11 of the 1st invention and spiral attaching part 21a in the cable holder 21 of the 2nd invention is good also considering the interval maintenance sections 11b or 21b as the shape of a screw type symmetrical as a center (configuration which the spiral sense reverses in the center), for example, although the whole has the shape of a screw type of the same direction. Moreover, it is not necessarily limited in the center but the interval maintenance sections 11b and 21b may really be combined in the partial position or the partial edge, although it is appropriate to prepare in the center of the spiral attaching parts 11a and 21a. Moreover, the parts which attach the cable holders 11 and 21 concerned can be aimed at the arbitrary parts which not only a chassis but the cable 12 wants to contact.

[0014]

[Effect of the Invention] According to this invention, an interval with the parts contiguous to a cable or the interval of cables is certainly maintainable by one or a few number of cable holders regardless of the length and the size of a cable, torsion, bending, etc. Thus, the workability at the time of the quality and reliability about the function to hold a cable improving, and holding a cable by the cable holder also improves. Moreover, since the

structure of this cable holder is simple, it can offer this outstanding part cheaply.

[Translation done.]

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CLAIMS

[Claim(s)]
[Claim 1] The cable holder characterized by having the spiral attaching part which can coil around a cable spirally and can hold a cable, and the interval maintenance section which a nose of cam is fixed to the parts which are prepared in this attaching part and one and adjoin a cable passage position, and maintains the interval of the aforementioned attaching part and the aforementioned parts.
[Claim 2] The cable holder characterized by having the spiral attaching part of the couple which can coil around two cables spirally, respectively and can hold each cable, and which counters, and the interval maintenance section which is prepared between the attaching parts of the aforementioned couple at one, and maintains the interval of both attaching parts.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] one example of the cable holder of the 1st invention is shown, and it can set to the busy condition of a cable holder -- it is a notching perspective diagram in part
[Drawing 2] One example of the cable holder of the 2nd invention is shown, and it is a perspective diagram in the busy condition of a cable holder.
[Drawing 3] The conventional cable holder is shown and it is the perspective diagram of the busy condition of a cable holder.
[Drawing 4] Other conventional cable holders are shown and it is the perspective diagram of the busy condition of a cable holder.
[Description of Notations]
11 21 Cable holder
11a, 21a Attaching part
11b, 21b Interval maintenance section
12 Cable
13 Non-contact Parts (Parts contiguous to Cable Passage Position)

[Translation done.]

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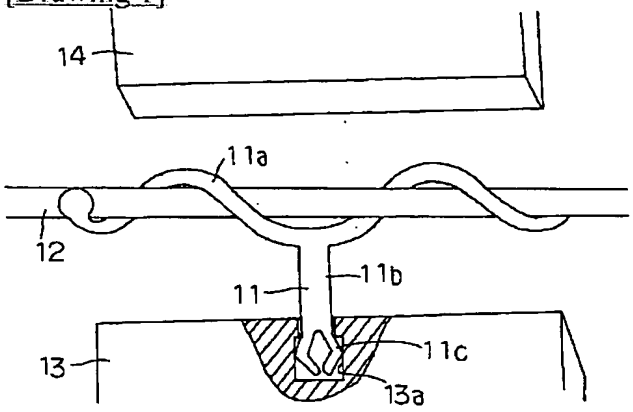
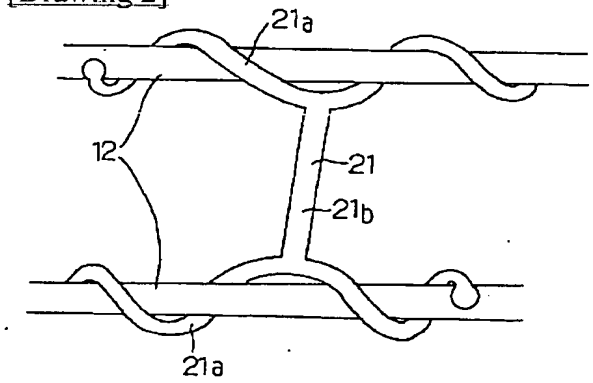
DRAWINGS

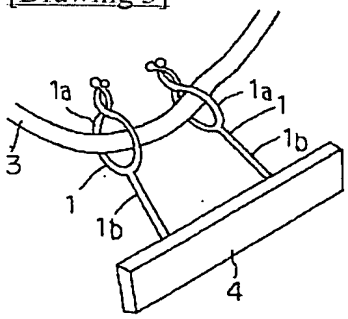
[Drawing 1]



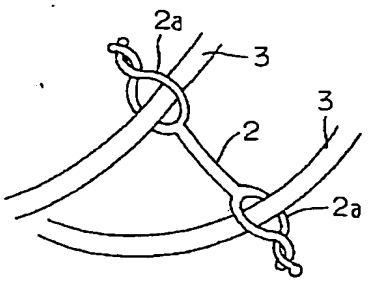
[Drawing 2]



[Drawing 3]



[Drawing 4]



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PATENT ABSTRACTS OF JAPAN

(11)Publication number : **09-237983**
(43)Date of publication of application : **09.09.1997**

(51)Int.Cl. H05K 7/00

(21)Application number : **08-069431**
(22)Date of filing : **29.02.1996**

(71)Applicant : **NEC HOME ELECTRON LTD**
(72)Inventor : **MATSUHASHI SHINOBU**

(54) CABLE HOLDER

(57)Abstract:
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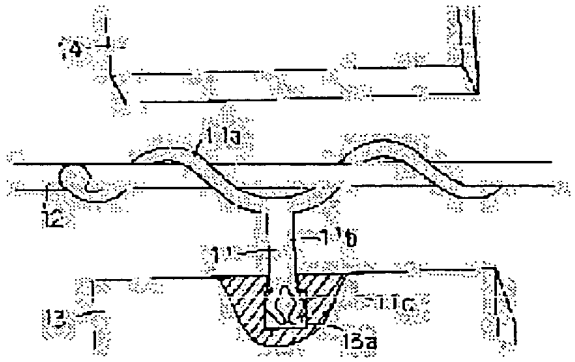
SOLUTION: A cable holder 11 is a plastic molded body equipped with a spiral holder 11a which spirally twines around a cable 12 to be able to hold it and a rod-shaped space retainer 11b integratedly joined to the center of the holder 11a at a right angle to the center. The holder 11a is twined around the cable 12, and the tip 11c of the spiral space retainer 11b is fixed to a part 13 such as a chassis. As the cable 12 is held with the spiral holder 11a, it can be tightly held even if it is slightly thin in outer diameter, and the spiral holder 11a is able to effectively curb the cable 12 holding its certain part specified in length. Therefore, the cable 12 can be held by the cable holder 11 as kept at a constant interval from the part 13 which is desired to be kept separate from the cable 12 by a certain distance independently of its length, size, torsion, bending and the like.



LEGAL STATUS

[Date of request for examination]

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[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

(19)日本国特許庁（ＪＰ）　(12)公開特許公報（Ａ）　(11)特許出願公開番号
特開平9－237983
(43)公開日　平成９年(1997)９月９日

(51)Int.Cl.[6]	識別記号	庁内整理番号	ＦＩ		技術表示箇所
Ｈ０５Ｋ　7/00			Ｈ０５Ｋ　7/00	Ｆ	

審査請求　未請求　請求項の数２　ＦＤ　（全　４　頁）

(21)出願番号　特願平8－69431
(22)出願日　平成８年(1996)２月29日

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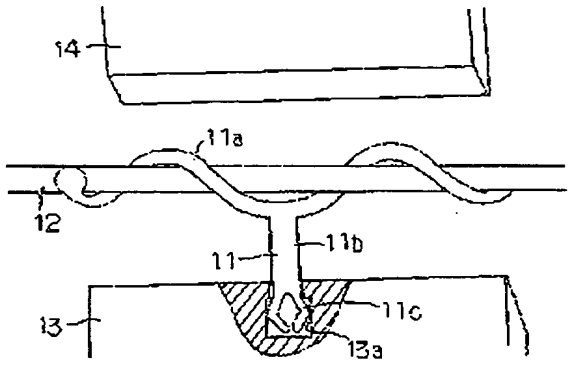
(54)【発明の名称】　ケーブル保持具

(57)【要約】
【課題】　ケーブルを保持するとともに、ケーブルの長さ、太さ、ねじれ、撓み等に関係なく、接触させたくない他の部品との間隔を一定に維持する。
【解決手段】　ケーブル保持具１１は、プラスチック成形品であり、ケーブル１２に螺旋状に巻き付いてケーブル１２を保持することができる螺旋状の保持部１１ａと、この螺旋状の保持部１１ａの中央に直角に一体結合された棒状の間隔維持部１１ｂとを備えている。保持部１１ａをケーブル１２に巻き付け、螺旋間隔維持部１１ｂの先端１１ｃをシャーシ等の部品１３に固定する。螺旋状の保持部１１ａでケーブル１２を把持するので、ケーブル１２の外径が若干細くなっても緊密にケーブル１２を把持でき、かつ、ケーブル１２の一定範囲を把持でき、ケーブル１２を有効に拘束できる。これにより、ケーブル１２の長さ、太さ、ねじれ、撓み等に関係なく、接触させたくない部品１３との間隔を一定に維持できる。



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【特許請求の範囲】

【請求項１】　ケーブルに螺旋状に巻き付いてケーブルを保持することができる螺旋状の保持部と、この保持部と一体に設けられケーブル通過位置に隣接する部品に先端が固定されて前記保持部と前記部品との間隔を維持する間隔維持部とを備えたことを特徴とするケーブル保持具。

【請求項２】　２本のケーブルにそれぞれ螺旋状に巻き付いて各ケーブルを保持することができる対向する一対の螺旋状の保持部と、前記一対の保持部間に一体に設けられて両保持部の間隔を維持する間隔維持部とを備えたことを特徴とするケーブル保持具。

【発明の詳細な説明】

【０００１】

【発明の属する技術分野】この発明は、例えば電子機器の内部や外部等において、ケーブルが他の部品に接触したり、ケーブル同士が互いに接触したりしないようにケーブルを保持するケーブル保持具に関する。

【０００２】

【従来の技術】例えば電子機器の内部や外部等において、ケーブルが他の部品に接触したりケーブル同士が互いに接触することが好ましくない場合、従来は図３のごときケーブル保持具１、あるいは図４のごときケーブル保持具を用いて、ケーブルを保持している。図３のケーブル保持具１は、二又片の先端が絞じり合わされて環状に閉じる形状の保持部１ａと棒状の間隔維持部１ｂとを一体に持つ構造のプラスチック製部品であり、前記保持部１ａにてケーブル３を保持し、ケーブル３を接触させることが好ましくない部品（以下、非接触部品と呼ぶ）４に前記間隔維持部１ｂの先端を固定することにより、ケーブル３を保持しながら非接触部品４との距離を一定に保つ。

【０００３】また、図４のケーブル保持具２は、棒状の間隔維持部２ｂの両端に前記と同様な保持部２ａを設けた構造であり、両保持部２ａにて平行する２本のケーブル３をそれぞれ保持することにより、両ケーブル３を保持しながら両ケーブル３の間隔を一定に保つ。

【０００４】

【発明が解決しようとする課題】上記図３のケーブル保持具１は、ケーブル３の長さ（拘束すべき範囲の長さ）が短く、しかも環状に閉じる保持部２ａの穴径がケーブル３の外径に適切に対応していてケーブル３を緊密に把持する場合は、ケーブル３を有効に拘束するので、１本のケーブル保持具１で非接触部品４との間隔を維持することも可能である。しかし、ケーブル３の長さが長くなったり外径が細くなったりした場合、その同じケーブル保持具３を使用すると、ケーブル３を有効に拘束できないので、１本のケーブル保持具３だけでは、ケーブル３が非接触部品４に接触するおそれが生じる。また、保持部１ａの穴径がケーブル３の外径に適切に対応していても、ケーブル３にねじれや撓みがある場合は、１本のケーブル保持具３では、やはりケーブル３を有効に拘束できず、ケーブル３が非接触部品４に接触するおそれが生じる。このため、従来は通常、ケーブル３と非接触部品４との間隔を維持するために複数本のケーブル保持具１を用いていた。

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【０００５】また図４のケーブル保持具２の場合も同様であり、ケーブル３の長さ、太さ、ねじれ、撓み等によっては、１つのケーブル保持具２ではケーブル３を有効に拘束できず、このため、従来は通常、ケーブル３どうしの間隔を維持するために複数本のケーブル保持具２を用いていた。

【０００６】本発明は上記従来の欠点を解消するためになされたもので、ケーブルを保持するとともに、ケーブルとこれに隣接する部品との間隔あるいはケーブルどうしの間隔を、ケーブルの長さや太さやねじれや撓み等に関係なく、１つ乃至少数のケーブル保持具で確実に維持することのできるケーブル保持具を提供することを目的とする。

【０００７】

【課題を解決するための手段】上記課題を解決する第１発明のケーブル保持具は、ケーブルに螺旋状に巻き付いてケーブルを保持することができる螺旋状の保持部と、この保持部と一体に設けられケーブル通過位置に隣接する部品に先端が固定されて前記保持部と前記部品との間隔を維持する間隔維持部とを備えたことを特徴とする。

【０００８】また、第２発明のケーブル保持具は、２本のケーブルにそれぞれ螺旋状に巻き付いて各ケーブルを保持することができる対向する一対の螺旋状の保持部と、前記一対の保持部間に一体に設けられて両保持部の間隔を維持する間隔維持部とを備えたことを特徴とする。

【０００９】

【発明の実施の形態】以下、第１発明および第２発明の実施の形態を図１、図２に示す実施例を参照して説明する。図１に第１発明のケーブル保持具１１の一実施例を示す。このケーブル保持具１１は、ケーブル１２を保持しながら、ケーブル１２とこのケーブル１２を接触させることが好ましくないシャーシ等の部品（以下、非接触部品という）１３との間隔を一定に維持するためのもので、ケーブル１２に螺旋状に巻き付いてケーブル１２を保持することができる螺旋状の保持部１１ａと、この螺旋状の保持部１１ａの中央に直角に一体結合された棒状の間隔維持部１１ｂとを備えて全体形状が鍛ねＴ形（螺旋部分を直線と見てＴ形）をなし、前記間隔維持部１１ｂの先端がケーブル通過位置に隣接する前記非接触部品１３に固定されている。この実施例の固定手段は、間隔維持部１１ｂの先端に弾性的に拡縮する膨大部１１ｃを形成し、非接触部品１３側にこの膨大部１１ｃを収容する内広がり凹所１３ａを形成した構造である。取り付け

時には、間隔維持部１１ｂの先端の膨大部１１ｃを内広がり凹所１３ａに押し込むと、膨大部１１ｃが縮小して入口を通過した後内部で拡大して、簡単に抜けないように内広がり凹所１３ａ内に固定される。なお、前記間隔維持部１１ｂの先端を隣接する非接触部品１３に固定する手段は、図示例に限らず、例えば、図１において、先端の膨大部１１ｃが係合する相手側が図示例のような内広がり凹所でなく薄い平板部にあけた単なる貫通穴の場合も考えられる。また、その単なる貫通穴の場合、間隔維持部１１ｂの先端部に膨大部でなくねじを形成し、ナットで締め付け固定する構成としてもよい。このケーブル保持具１１は、プラスチックで製造するのが適当である。また、その成形は射出成形等により行うことができる。

【００１０】上記のケーブル保持具１１で、ケーブル１２を保持する場合、ケーブル保持具１１の螺旋状の保持部１１ａをケーブル１２に螺旋状に巻き付けた後、間隔維持部１１ｂを非接触部品１３の内広がり凹所１３ａに取り付けるか、またはその逆の手順で行うことができる。このケーブル保持具１１によりケーブル１２を保持すると、螺旋状の保持部１１ａでケーブル１２を把持するので、ケーブル１２の外径が若干細くなっても、同様に緊密にケーブル１２を把持することが可能であり、ケーブル１２を有効に拘束することができる。また、螺旋状の保持部１１ａがケーブル１２の一定の長さ範囲を保持することになるので、この点でもケーブル１２を有効に拘束することができる。したがって、ケーブル１２にねじれや撓みがあっても、保持部１１ａがケーブル１２をそのねじれや撓みを矯正して保持し、ケーブル１２を所望の位置に保持することができる。このように、ある程度はケーブル１２の長さ、太さ、ねじれ、撓みに関係なく、ケーブル１２を保持しながら非接触部品１３との間隔を維持できる。なお、図１において、１４は同じくケーブル１２を接触させることが好ましくないシャーシ等の部品であり、この部品１４に対する間隔も一定に維持されている。

【００１１】図２に第２発明のケーブル保持具２１の一実施例を示す。このケーブル保持具２１は、２本のケーブル１２相互の間隔を一定に保つためのもので、２本のケーブル１２にそれぞれ螺旋状に巻き付いて各ケーブル１２を保持することができる対向する一対の螺旋状の保持部２１ａと、前記一対の保持部２１ａ間に一体に設けられて両保持部２１ａの間隔を維持する棒状の間隔維持部２１ｂとを備えて、全体形状が概ねＨ形（螺旋部分を直線と見てＨ形；図では横向きのＨ）をなしている。

【００１２】このケーブル保持具２１においては、図示の通り、螺旋状の２つの保持部２１ａをそれぞれケーブル１２に巻き付けると、各保持部２１ａでそれぞれケーブル１２を保持しながら、間隔維持部２１ｂによってケーブル１２同士の間隔が一定に維持される。

【００１３】なお、第１発明のケーブル保持具１１における螺旋状の保持部１１ａ、および第２発明のケーブル保持具２１における螺旋状の保持部２１ａはいずれも、全体が同じ向きの螺旋形状であるが、例えば、間隔維持部１１ｂまたは２１ｂを中心として対称的な螺旋形状（中央で螺旋の向きが反転する形状）としてもよい。また、間隔維持部１１ｂ、２１ｂは、螺旋状の保持部１１ａ、２１ａの中央に設けるのが適切であるが、必ずしも中央に限定されず、偏った位置ないし端部において一体結合してもよい。また、当該ケーブル保持具１１、２１を取り付ける部品は、シャーシに限らず、ケーブル１２を接触させたくない任意の部品を対象とすることができる。

【００１４】

【発明の効果】本発明によれば、ケーブルと隣接する部品との間隔あるいはケーブルどうしの間隔を、ケーブルの長さや太さやねじれや撓み等に関係なく、１つ乃至少ない数のケーブル保持具で確実に維持することができる。このように、ケーブルを保持する機能についての品質・信頼性が向上し、また、ケーブル保持具でケーブルを保持する際の作業性も向上する。また、このケーブル保持具の構造は単純であるから、この優れた部品を安価に提供することができる。

【図面の簡単な説明】

【図１】第１発明のケーブル保持具の一実施例を示すもので、ケーブル保持具の使用状態における一部切り欠き斜視図である。

【図２】第２発明のケーブル保持具の一実施例を示すもので、ケーブル保持具の使用状態における斜視図である。

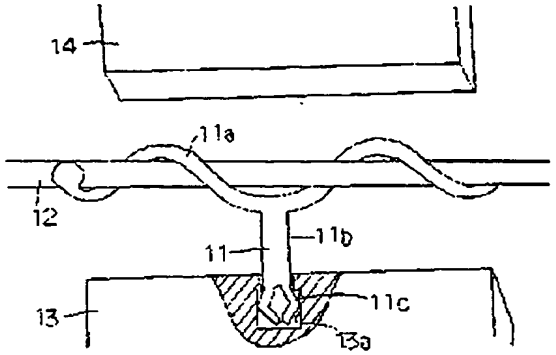
【図３】従来のケーブル保持具を示すもので、ケーブル保持具の使用状態の斜視図である。

【図４】他の従来のケーブル保持具を示すもので、ケーブル保持具の使用状態の斜視図である。

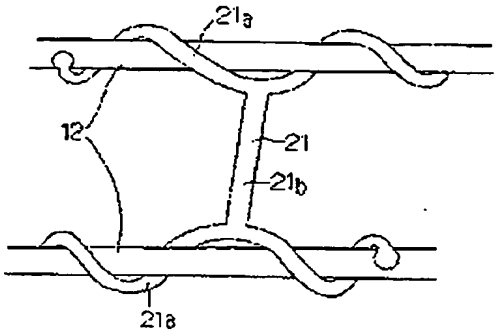
【符号の説明】

１１、２１　ケーブル保持具
１１ａ、２１ａ　保持部
１１ｂ、２１ｂ　間隔維持部
１２　ケーブル
１３　非接触部品（ケーブル通過位置に隣接する部品）

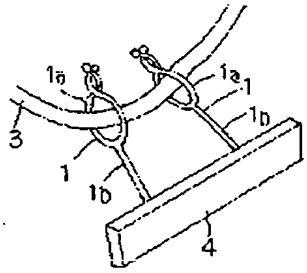
【図1】


14
11a
12
11
11b
11c
13
13a

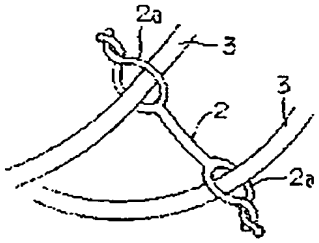
【図2】


21a
12
21
21b
21a

【図3】


1a
1a
1
1b
3
1
1b
4

【図4】


2a
3
3
2
2a